## CLAIMS:

- 1. Isolated and purified pili obtained from Mycobacterium tuberculosis.
- 2. The pili of Claim 1, which have a diameter of about 2 to about 7 nm.
- 3. The pili of Claim 1, which have a length of at least about 5 to about 10 microns.
- 4. The pili of Claim 1, which have been separated from *Mycobacterium tuberculosis* cells by mechanical shearing, differential centrifugation or isopycnic separation.
  - 5. The pili of Claim 1, substantially free of cells of Mycobacterium tuberculosis.
- 6. A method of producing the pili of Claim 1, comprising subjecting cells of *Mycobacterium tuberculosis* which produce the pili to mechanical shearing, differential centrifugation or isopycnic separation and then isolating the pili from the cells.
- 7. An antibody having high affinity and specificity for pili from *Mycobacterium tuberculosis*.
- 8. A method of inducing an immune response against *Mycobacterium tuberculosis*, comprising administering an effective amount of *Mycobacterium tuberculosis* pili to a subject.
  - 9. The method of Claim 8, wherein the pili are isolated and purified.
  - 10. The method of Claim 9, wherein the subject is a human.
- 11. A method of detecting a *Mycobacterium tuberculosis* infection in a subject, comprising assaying a body fluid from the subject for the presence of an antibody to *Mycobacterium tuberculosis* pili.
  - 12. The method of Claim 11, wherein the subject is a human.

- 13. The method of Claim 12, wherein the body fluid is serum.
- 14. An isolated and purified amino acid sequence which comprises SEQ ID NO: 1.
- 15. An isolated and purified amino acid sequence which comprises SEQ ID NO: 2 or 5.
  - 16. An isolated and purified amino acid sequence which comprises SEQ ID NO: 3.
- 17. A peptide fragment of the amino acid sequence of SEQ ID NO: 2 or 5 which is immunogenic.
  - 18. The peptide fragment of Claim 17, which is SEQ ID NO: 1 or 3.
- 19. An isolated and purified nucleic acid which encodes the amino acid sequence of Claim 14.
- 20. An isolated and purified nucleic acid which encodes the amino acid sequence of Claim 15.
- 21. An isolated and purified nucleic acid which encodes the amino acid sequence of Claim 16.
- 22. An isolated and purified nucleic acid which encodes the peptide fragment of Claim 17.
- 23. A method of producing the amino acid sequence of Claim 14, comprising transforming a host cell with a nucleic acid which encodes the amino acid sequence, wherein the host cells produces the amino acid sequence, and collecting the amino acid sequence.
- 24. A method of producing the amino acid sequence of Claim 15, comprising transforming a host cell with a nucleic acid which encodes the amino acid sequence, wherein the host cells produces the amino acid sequence, and collecting the amino acid sequence.

25. A method of producing the amino acid sequence of Claim 16, comprising transforming a host cell with a nucleic acid which encodes the amino acid sequence, wherein the host cells produces the amino acid sequence, and collecting the amino acid sequence.

- 26. A method of producing the peptide fragment of Claim 17, comprising transforming a host cell with a nucleic acid which encodes the peptide fragment, wherein the host cells produces the amino acid sequence, and collecting the peptide fragment.
- 27. An antibody which binds with high affinity and specificity to the amino acid sequence of Claim 14.
- 28. An antibody which binds with high affinity and specificity to the amino acid sequence of Claim 15.
- 29. An antibody which binds with high affinity and specificity to the amino acid sequence of Claim 16.
- 30. An antibody which binds with high affinity and specificity to the peptide fragment of Claim 17.
- 31. A method of inducing an immune response against *Mycobacterium tuberculosis*, comprising administering an effective amount of the amino acid sequence of Claim 14 to a subject.
- 32. A method of inducing an immune response against *Mycobacterium tuberculosis*, comprising administering an effective amount of the amino acid sequence of Claim 15 to a subject.
- 33. A method of inducing an immune response against *Mycobacterium tuberculosis*, comprising administering an effective amount of the amino acid sequence of Claim 16 to a subject.

34. A method of inducing an immune response against *Mycobacterium tuberculosis*, comprising administering an effective amount of the peptide fragment of Claim 17 to a subject.

- 35. A method of detecting a *Mycobacterium tuberculosis* infection in a subject, comprising assaying a body fluid from the subject for the presence of the antibody of Claim 27.
- 36. A method of detecting a *Mycobacterium tuberculosis* infection in a subject, comprising assaying a body fluid from the subject for the presence of the antibody of Claim 28.
- 37. A method of detecting a *Mycobacterium tuberculosis* infection in a subject, comprising assaying a body fluid from the subject for the presence of the antibody of Claim 29.
- 38. A method of detecting a *Mycobacterium tuberculosis* infection in a subject, comprising assaying a body fluid from the subject for the presence of the antibody of Claim 30.
- 39. A method of inducing an immune response against *Mycobacterium tuberculosis*, comprising administering an effective amount of a nucleic acid encoding a pilin from *Mycobacterium tuberculosis* or an immunogenic fragment of a pilin from *Mycobacterium tuberculosis* to a subject.
  - 40. The method of Claim 39, wherein the nucleic acid is SEO ID NO: 4.
  - 41. The method of Claim 39, wherein the subject is a human.